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THE SCIENTIFIC AMERICAN,
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By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much interesting intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions; Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

TERMS.—The "Scientific American" will be furnished to subscribers at \$2, per annum,—one dollar in advance, and the balance in six months.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1/2 cents for every subsequent insertion.

A Gallop on the Grand Prairie.

(A WESTERN SONG.)

Away we go on the boundless sea,
Like unaged birds on the deep blue sea;
As blithe, as fearless, as wild and free,
On the Grand Prairie.

Away, away on our courser fleet,
Where the grass is green, the air is sweet,
Where the earth and sky like lovers meet,
On the Grand Prairie.

Now we are leaving the forest trees;
Flying along like the fairy breeze,
Midst budding flowers and humming bees,
On the Grand Prairie.

Now Sol comes up in his proud array;
Look, look at those golden clouds that lay
Like shining curls on the brow of day,
On the Grand Prairie.

It is as if morning, fresh and fair,
Threw back her tresses of yellow hair,
To breathe the balm of the fragrant air,
On the Grand Prairie.

And there, see there is a shining stream,
Laughing along in the morning beam;
A charm, a spell, a poet's dream,
Is the Grand Prairie.

On, on we speed, there is naught in sight,
But the bending sky, so blue and bright,
And the glowing, sparkling sheen of light,
On the Grand Prairie.

It seems to me that an angel band
Passed o'er the earth with a magic wand,
And waded the beauties of fairy land
To the Grand Prairie.

Oh! night, how glorious night must be,
Where there is no mountain tower or tree,
To conceal the blaze of her jewelry,
On the Grand Prairie.

When she donders veil of silvery blue;
When the moon is bright, the sky is blue;
When the stars like angel eyes look through
On the Grand Prairie.

Tell not of your hills, so wild and high,
Mountains that rise to the bright blue sky;
I'd rather live and I'd rather die
On the Grand Prairie.

Keep, keep the city, the burgh, the town,
Where the air is damp, the light is brown;
Give me a spot where the sun looks down
On the Grand Prairie.

Seek ye the mirth that the heart beguiles?
You'll find it not in your marble piles;
It dwells where the lips are wreathed in smiles
On the Grand Prairie.

Want ye the happiness truth imparts;
Clear heads, strong arms and noble hearts?
Come ye away from your crowded marts,
To the Grand Prairie.

Sigh ye for the love that true hearts prize;
The kindly feelings that scorn disguise?
Then come where the soul looks through the eyes,
On the Grand Prairie.

Would you see women as fresh and fair
As wild flowers in their beauty are?
Come, come from the sultry city's glare,
To the Grand Prairie.

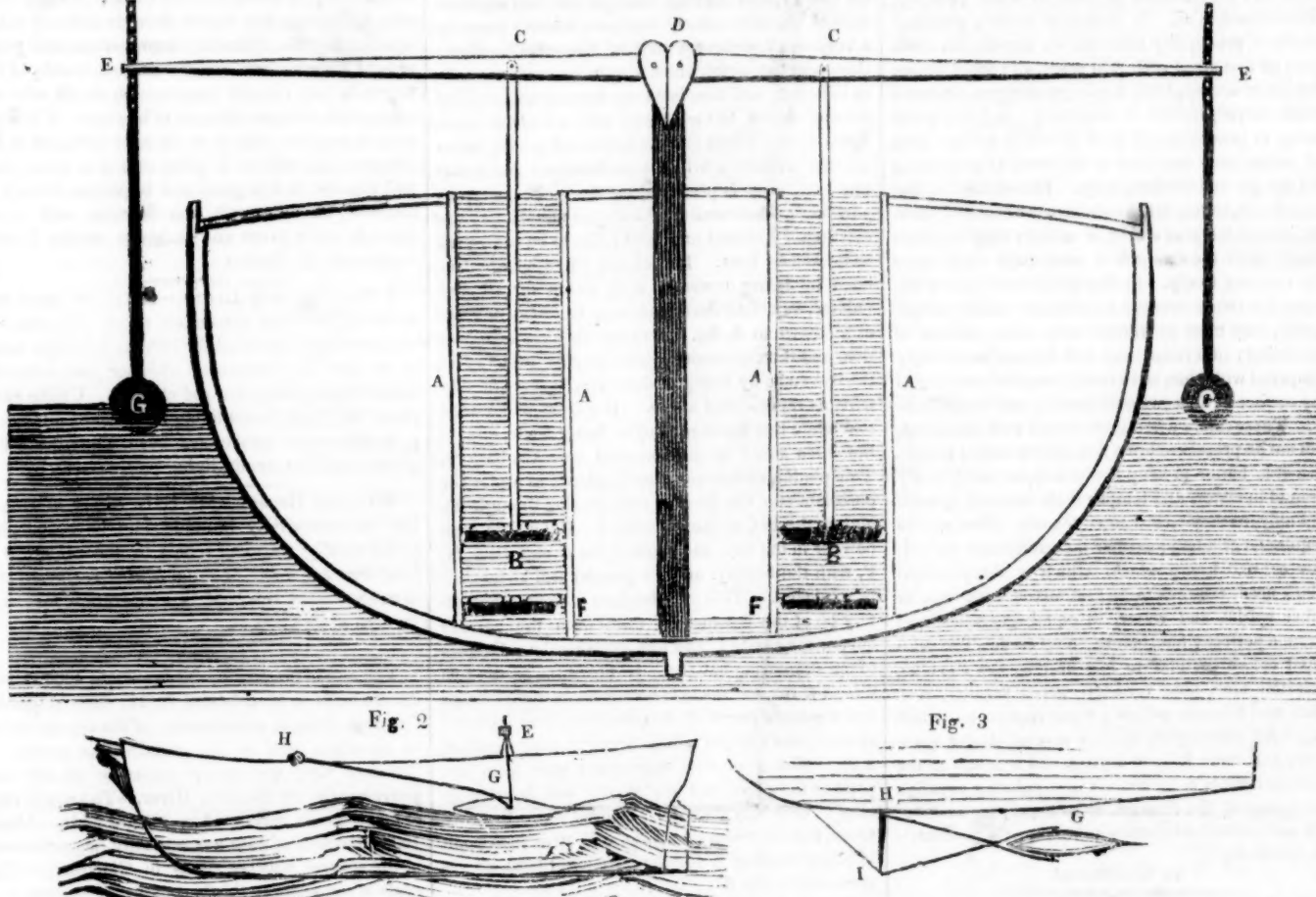
The oppressor's tread may never stain
The glorious soil of this lovely plain,
For liberty holds her court and reign
On the Grand Prairie.

Bank Note Lyric.

Bank notes, it is said, once gold guineas defied,
To swim in the torrent of trade's swelling tide;
But ere they arrived at the opposite brink,
The notes loudly cried, "help! cash-as we sink!"

That papers should sink, and that guineas should swim
May appear to some folks a ridiculous whim;
But ere they condemn, let them hear this suggestion—
In pun making, gravity's out of the question.

BEST MODE OF RAISING WATER.



INTRODUCTORY REMARKS.—We have heretofore intimated an intention of introducing an invention, which would effectually steer a ship to any point of compass without the aid of a helmsman; we have already explained the principles of electro-magnetism, so far as to show some of the effects that may be produced by the connection and disconnection of the galvanic circuit; but as that agent can not conveniently furnish a sufficient power to govern a ship's helm, we find it requisite to introduce other subjects preliminary to that of steering. Every experienced mariner is aware of the inefficiency of the ordinary pumps used on board vessels, to keep the hold free of water in cases of extensive leakage in tempestuous weather, partly on account of their delicate construction, and liability to get out of order, but principally on account of their incapacity of discharging water in sufficient quantities, by the mere manual strength of a few exhausted seamen. To remedy this deficiency we here introduce a very simple plan, easy of construction and very permanent, by which several hundred gallons of water per minute, may be discharged, and that without any exertion on the part of the crew.

EXPLANATION.—This engraving represents a section of the hull of a marine vessel, with two pumps of peculiar construction, with sections of the apparatus for working them. The pumps, A A, consist of square vertical flumes, two or three feet in diameter made of planks, supported and bound together by either iron bands, or frames of timber, locked at the corners. In each flume is a horizontal piston, B B, also made of planks, and of dimensions corresponding with the interior of the flume; and from the centre of the piston an iron rod, B C, extends up to a horizontal lever beam, D E, above the deck. Near the bottom of each flume is a fixed seat, F F, also made of planks, and each seat and piston is furnished with two large clapper-valves, opening upward. The pistons are made to move freely in the flumes, but require no packing, nor even a leather edging. The two lever beams above deck, are each connected by a rivet bolt to a central upright post, D, and from the extreme end, E, of each beam, a rod extends down to a buoy, G, which floats on the surface of the water. In this view, a section only of the buoys are shown, which gives them a round appearance: but in the outline sketch, fig. 2, it will be seen that the buoy G is a revoloid-spindle figure, which has been proved in a former number to be almost perfectly free from encountering resistance in passing through fluids. These buoys are governed and kept in place by means of double brace rods, G H, fig. 2, the lever-beam being shown at E. H is an arm which projects 6 or 8 feet horizontally from the side of the vessel, as shown H I, in a vertical view, fig. 3; and from the points H and I, the brace rods extend to the buoy G. It will be readily understood that the pumps are to be operated by the power of the buoys, moving with the undulations of the water; and that consequently, in the more rough and turbulent weather, they will operate the more powerful. The buoys with the apparatus connected, may be readily taken on board the vessel, when not required in operation, and will not be found inconvenient of stowage or management. This mode of raising water is peculiarly applicable in all cases where water is to be raised in large quantities for milling purposes or for irrigation of lands, in which cases one lever beam may be balanced on the centre post, D, and one of the connecting rods, E, may be connected to the crank of a water wheel or the piston rod of a steam engine.

A RAILWAY RACE.—The editor of the London Chronicle gives the following account of an exciting scene:—"A railway race is a sufficiently exciting and interesting event; but it is rarely witnessed, and scarcely ever in perfect safety. Between a pair of well matched locomotives it would be sufficiently exciting; but between a new system, like the atmospheric, and its rival, the locomotive, the character and reputation of both systems for speed depending on the issue, a well matched contest would be of no common interest. In this case we were lucky enough to see such a race; and we believe any of our readers who leave London bridge station at twenty minutes past two, and take an atmospheric ticket, may any day see the same. We were standing at the Forest Hill station, preparing to start, when it was announced that the Dover express train was in sight! Immediately we (the atmospheric train) made preparations to start, and were just in the act of starting from rest when the locomotive train 'wicked' past us at, probably, some 35 miles an hour. We started, but before we got into motion at any velocity the Dover train was a mile ahead of us, and was evidently gaining rapidly in speed. However, on we went like a whirlwind, and it soon became evident that we were gaining on our rival. Three or four minutes decided the race. We passed the express train at a rate exceeding her own by 15 or 20 miles an hour. Our velocity could not then be less than 60 miles an hour. It was easily and steadily maintained, and we were over the Brighton viaduct and considerably beyond it before the Dover reached it."

DIAMOND CEMENT.—This article, so much esteemed for uniting pieces of broken glass, for repairing precious stones, and for cementing them to watch cases and other ornaments, is made by soaking isinglass in water until it becomes quite soft, and then mixing it with spirit in which a little gum mastic and ammoniacum have been dissolved.

TENDER CONSCIENCES.—Some people have consciences so very tender that they make no use of them whatever.

TIMING THE HOUSE.—The correspondent of the Argus writes, that while Mr. Cobb, of Georgia, was speaking a few days ago, seventeen individuals crowded around him, at the place where of all other places, they might catch the Chairman's eye. As Mr. C. turned to look at the clock, to ascertain when his hour would expire, the seventeen braced themselves, throwing back one leg, pushing forward the head, and partly extending the right hand with the most intense anxiety exhibited in every muscle. In the middle of a sentence, down came the hammer, announcing the expiration of the hour. "Go!" shouted a waggoner member from Alabama, at the top of his voice, and instantly the seventeen sprang to their feet, crying, "Mr. Speaker," as loud as they could bawl! Ladies in the gallery were frightened into hysterics, an immense roar of laughter echoed through the Hall, while Mr. Holmes of South Carolina, was seen, with horror depicted in his countenance, counting, with his pointed finger, the numerous aspirants for the floor. It was a rich scene, one which would have made Hogarth's pencil laugh.

ANCIENT BRONZE.—For Cutting Instruments.—Copper 100 parts, tin 14 parts, when hardened and tempered after the manner of the ancients, will yield an edge nearly equal to that of steel. Several analyses have been made of ancient instruments whence it appears that the proportion of tin varies from 4 to 15 per cent, which tends to prove that more depends on the exact mode of tempering the alloy, than on the relative qualities of the ingredients. Zinc and tin are inadmissible in bronze for this purpose. One or two per cent of iron might, nevertheless, be added with advantage. The ancient bronze used for springs, contained only 3 to 4 per cent of tin.

GREAT BELL FOUNDRY.—We learn that 258 bells averaging 534 lbs. each, have been cast at the extensive foundry of Mr. Andrew Meneeley, in West Troy, during the past year—just 113 more than in 1844. Five of these bells were for the fire department of New York city.

A NEW MODE OF RAISING TOBACCO.—The following which is worthy of the Parisian *bohemiennes* occurred at Pittsburgh, where everything and every body smokes. A colored man, who was very partial to the weed, but whose exchequer prevented the indulgence, met a little boy about three years old on Fourth street, and accosted the little urchin with— "How dare you smoke a cigar? Throw it away this instant, you little white rascal, or I'll tell your father!" The terrified boy immediately threw the stump he was smoking into the middle of the street, and scampered off. The darkey quietly picked up the castaway fragment and walked off—smoking it with as much gusto as though it had been "fresh as imported."

THAT BOY WILL BE A MAN YET.—The other day we saw a bright little boy, some seven summers old, tugging away through the snow with a large armful of wood. We were just on the point of speaking a word of praise to him, when the little fellow's feet slipped from under him and down he went, wood and all, upon the sidewalk. We expected to see him burst out a crying, when, to our surprise, he arose with much composure, saying, "darn it, I'll try that over again." With much energy of purpose he gathered up his wood, and went on his way. We'll bet a rusty copper, that that boy will yet be a distinguished man.—*Man (N.H.) Mem.*

COMPOSITION USED IN WELDING CAST-STEEL.—Take of borax, 10 parts, sal-ammoniac, 1 part; grind or pound them roughly together, then fuse them in a metal pot over a clear fire, taking care to continue the heat until all spume has disappeared from the surface. When the liquid appears clear, the composition is ready to be poured out to cool and concrete; afterward, being ground to a fine powder, it is ready for use.

To use this composition, the steel to be welded is raised to a heat which may be expressed by a "bright yellow;" it is then dipped among the welding powder, and again placed in the fire until it attains the same degree of heat as before; it is then ready to be placed under the hammer.

PATENT LAWS.

(Continued from No. 19.)

Sec. 6. That any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use or on sale, with his consent or allowance, as the inventor or discoverer, and shall desire to obtain an exclusive property therein, may make application, in writing, to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceeding had, may grant a patent therefor. But before any inventor shall receive a patent for any such new invention or discovery, he shall deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using, and compounding the same, in such full, clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same; and in case of any machine, he shall fully explain the principle, and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement or combination, which he claims as his own invention or discovery. He shall, furthermore, accompany the whole with a drawing or drawings, and written references, where the nature of the case admits of drawings; or with specimens of ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, where the invention or discovery is of a composition of matter; which descriptions and drawings, signed by the inventor, and attested by two witnesses, shall be filed in the Patent Office; and he shall, moreover, furnish a model of his invention, in all cases which admit of a representation by model, of a convenient size to exhibit advantageously its several parts. The applicant shall also make oath, or affirmation that he does verily believe that he is the original and first inventor, or discoverer of the art, machine, composition, or improvement, for which he solicits a patent; and that he does not know or believe that the same was ever before known or used; and also of what country he is a citizen; which oath or affirmation may be made before any person authorized by law to administer oaths.

Sec. 7. That on the filing of any such application, description and specification, and the payment of the duty hereinafter provided, the Commissioner shall make, or cause to be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country, prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale, with the applicant's consent or allowance, prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that any part of that which is claimed as new, had before been invented or discovered, or patented, or described in any printed publication in this or any foreign country as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him briefly such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification to embrace only that part of the invention or discovery which is new. In every such case, if the applicant shall elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars, part of the duty required by this act, on filing a notice in writing of such election in the Patent Office; a copy of which, certified by the Commissioner, shall be a sufficient warrant to the Treasurer for paying back to the said applicant the said sum of twenty dollars. But if the applicant, in such case, shall persist in his claims for a patent, with or without any alteration of his specification, he shall be required to make oath or affirmation anew, in manner as aforesaid; and if the specification and claim shall not have been so modified, as, in the opinion of the Commissioner, shall entitle the applicant to a patent, he may, on appeal, and upon request in writing, have the decision of a board of examiners, to be composed of three disinterested persons, who shall be appointed for that purpose by the Secretary of State, one of whom, at least, to be selected, if practicable and convenient, for his knowledge and skill in the particular art, manufacture, or branch of science to which the alleged invention appertains; who shall be under oath or affirmation for the faithful and impartial performance of the duty imposed upon them by the said appointment. Said board shall be furnished with a certificate in writing of the opinion and decision of the Commissioner, stating the particular grounds of his objection, and the part or parts of the invention which he considers as not entitled to be patented. And the said board shall give reasonable notice to the applicant, as well as to the Commissioner, of the time and place of their meeting, that they may have an opportunity of furnishing them with such facts and evidence as they may deem necessary to a just decision; and it shall be the duty of the Commissioner to furnish to the board of examiners such information as he may possess relative to the matter under their consideration.

To be continued.

A FAIR HIT.—"Here, you boggy trotter," said a half dandy soaplock to an Irish laborer, "come, tell the biggest lie you ever told in yer life, and I'll treat you to a whiskey punch." "An by me sowl, yer honor's a gentleman," retorted Pat.



Come Away!

BY D. MANSFIELD.

O! come—come away, for time's career is closing;

Let worldly care henceforth forbear;

O! come—come away!

Come, come, our holy joys renew;
Where love and heavenly friendship grew
The Spirit welcomes you.

O! come—come away!

Awake! awake! no time now for reposing;
"The Lord is near!" breaks on the ear;
O, come—come away.

O, come where Jesus' love will be,
Who said, "I meet with two or three."
Sweet promise made to thee;
O, come—come away.

Come, where sacred song the pilgrim's heart is cheering;
Come, and learn the power of prayer;
O, come—come away.

In sweet notes of sympathy,
We praise and pray in harmony—
Love makes our unity;
O, come—come away.

Night will soon be o'er, and endless day appearing,
You leave the gloom for your sweet home;
O, come—come away.

These words in trumpet-tone resound,
And the dark, cold, sepulchral ground
Confesses Jesus crowned.

Then come—come away.

There's Beauty Everywhere.

There's beauty in the waving wave,

When the storm is raging high—

There's beauty in the quiet stream

As it gently glideth by.

There's beauty in the cloudless night

When stars are shining clear,

Or darkness shuts them from the sight—

There's beauty everywhere.

There's beauty when the morning dawns

And gives to earth her light,

And when the fading sun proclaims

The slow approach of night.

There's beauty in the verdant lawn

When buds their blushes wear,

And when the ice-king holds his court,

There's beauty everywhere.

There's beauty when the Christian kneels

In humble prayer to heaven—

When o'er his soul hope sweetly steals,

And tells of sins forgiven.

There's beauty in the merry sounds

That float upon the air,

When music breathes a happy strain—

There's beauty everywhere.

It snows! It snows!

It snows! it snows! from out the sky,

The feathered flakes, how fast they fly,

Like little birds, that don't know why

They're on the chase, from place to place,

While neither can the other trace.

It snows! it snows! a merry play

Is o'er us on this heavy day!

As dancers in an airy hall,

That hasn't room to hold them all,

While some keep up, and others fall,

The atoms shift, thick and swift,

They drive along to form the drift,

That weaving up, so dazzling white,

Is rising like a wall of light.

But now the wind comes whistling loud,

To snatch and waft it, as a cloud;

Of giant phantoms in a shroud:

It spreads! it curls! it mounts and whirls,

At length a mighty wing unfurls!

And then, away! but, where, none knows,

Or ever will.—It snows! it snows!

To-morrow will the storm be done;

Then, out will come the golden sun;

And we shall see, upon the run

Before his beams, in sparkling streams,

What now a curtain o'er him seems.

And thus, with life, it ever goes:

'Tis shade and shine!—It snows! it snows!

A TECHNICAL TOAST.—The following was given at a recent Typographical celebration in Baltimore:

Woman:

"The sweetest types upon the earth;

The prettiest forms, the fairest faces,

The loveliest flowers that e'er had birth;

That ever clung to man's embraces."

THE FEMALE EYE.—John Smith says that "the female eye has the following variety of expression: The

glare, the stare, the leer, the sneer, the invitation, the

defiance, the denial, the consent, the look of love, the

flash of rage, the sparkling of hope, the languishment of

softness, the squint of suspicion, the fire of jealousy,

and the lustre of approbation and pleasure." He forgot to mention that peculiar bashful glance,

denominated "sheep's eyes."

A SLIGHT PUZZLE.—An orchard contained 36

trees in six equal rows of six each. Six of the trees

died, still there was an even number in each row

both ways. If any of our readers will send a draft

representing the order of the remaining trees, after

the six were removed, we will furnish an engraving

thereof in the succeeding number.

RIGHT.—"Does Wright write 'rite' right?" enquired

a schoolmaster of his assistant, concerning the

performance of a boy named Wright, who was

writing from a copy in which the word "rite" oc-

curred "Perfectly right," answered Wright.

"RICHES TAKE TO THEMSELVES WINGS," &c.—

Two brothers in Maine, by the name of Rich have

lately been married to two sisters by the name of

Wings, and removed to Illinois.

The Magnetic Telegraph.

THE TELEGRAPH PRICES.—The New York and Boston Telegraph Association have fixed the prices of communications consisting of fifteen words or less, according to the following scale:

	Boston	Worcester	Springfield	Hartford	New Haven	Bridgeport	New York
0	10	15	15	15	15	15	25
10	0	10	10	10	10	10	15
15	0	10	10	10	10	10	15
20	0	10	10	10	10	10	15
25	10	15	15	15	15	15	25

RULE.—The angle of the two places, brought into correspondence, indicates the amount of charge.

For every addition of ten, or a less number of words, add to the charge 5 cents.

The name of the sender, the address of the communication, and the necessary directions, gratis.

The offices in New York and Boston are to be kept open day and night—the first applicant to be first served.

No individual shall use the Telegraph for more than ten minutes at a time, while another is waiting.

Officers of the State, United States, or Police, in great public emergencies only shall have the preference for a reasonable time.

The arrival of every steamer shall be telegraphed gratis at every station along the line, as soon as publicly known at New York or Boston.

The line between Boston and New Haven is nearly ready to commence operation. A continuous line from Washington to Boston will be completed early in the Spring.

We are informed that the line between Philadelphia and this city, is nearly completed, and is already in operation as far as Newark. Some little delay has been occasioned by the difficulty of extending the line across the North River. The probability is that the wire will be eventually carried in an elevated position, supported by lofty masts erected on piers, or by aerial floats. The line from New Haven to Boston, and that from Albany to Utica, are nearly ready for operation. There is no question but that the telegraphic science in this country is far ahead of any thing of the kind in Europe, and will not soon be overtaken.

1. A WATER-PROOF GLUE.—Melt common glue in the smallest possible quantity of water, and add, by drops, linsed oil that has been rendered drying by having a small quantity of litharge boiled in it; the glue being briskly stirred when the oil is added.

2. Glue will resist water to a considerable extent by being dissolved in skimmed milk.

3. The addition of finely levigated chalk, to a solution of common glue in water, strengthens it, and renders it suitable for signs or other work that is exposed to the weather.

4. A glue, or cement, that will hold against fire or water, may be made by mixing and boiling together linsed oil and quick lime. This mixture must be reduced to the consistence of soft putty and then spread on tin plates and dried in the shade where it will dry very hard. This may afterward be melted like common glue, and must be used while hot.

CENTRIFUGAL FORCE.—A correspondent, who writes from Manchester, N. H., enquires what is the amount of the centrifugal force, exerted by each blade of a beater when in operation; the weight of each blade being 5 lbs., its distance from the centre of motion 7 inches, and the velocity 1800 revolutions per minute. We answer by the rule: first dividing the number of revolutions per minute, (1800) by 60, to find the number per second, which is 30. The square of 30 is 900, which being multiplied by double the radius, 14 inches, produces 12,600. This, multiplied by 1-20 of the weight of the blade—25 (1-4 of 1 lb.) gives the answer 3,150 lbs. Our correspondent need not be surprised, that these blades sometimes fly off from the arms, considering the immense force which constantly urges them from the centre.

REFINEMENT IN LANGUAGE.—A late writer has made some injudicious remarks on the too frequent and improper use of the word "got," and gives the following examples in illustration thereof:

I rose early, and after I got up early, and got dressing as speedily as myself dressed as quick-possible, I breakfasted, by as I could; I then got and proceeded by the my breakfast in all haste, omnibus in time to see and got into an omnibus, my friend. I induced that I might get to my him to listen to the par-friend's house before he ticulars, and obtained his got away to business. I assent to the measure soon got him into a yield-proposed, on condition ing humor, and got his that I succeeded with the consent to the plan, provi-ther parties, which, in-deed I could get that of deed, I had already done. the other parties, which indeed, I had got already.

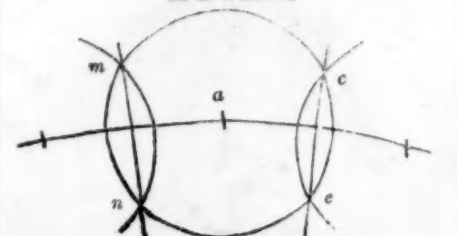
EMIGRATION TO TEXAS.—A letter from Harts, Germany, says:—"The emigration from our mountains for Texas, have lately been so numerous, that several of the villages are entirely deserted. In less than three months, more than six thousand persons had quitted the country, to tempt fortune at a distance of four thousand leagues." A Western paper states that more than forty wagons, bound for Texas, had crossed the Mississippi, near the Red River, in one week.

WASTE OF THE PUBLIC MONEY.—It is stated in the Worcester (Mass.) Christian Citizen, that the salaries of such officers of the U. S. Navy, as have been doing nothing, but waiting for orders during the year past, amount to the round sum of \$444,170. This looks rather more *knarish* than naval.

A NEW GAME.—There are said to have been several anonymous letters lately received by different individuals, in which they are promised some important and highly advantageous intelligence, on condition of a small remittance in cash to the writers. Those who are thus gulled, generally keep dark on the subject.

WAFERS.—We have recently procured a box of the most durable kind. The most effectual mode using them, is to put them in soak in hot water over night previous to applying them as letter fasteners

To ascertain the extent of the Radius of a Curve.



Place one leg of the dividers on any part of the curve line, as at *a*, and describe a small circle. Remove the dividers to another point on the curve line, somewhat less than the diameter of the circle, from the first point, and describe a curve that shall intersect the periphery of the circle in two places, as at *c* and *e*. Again remove the dividers to about an equal distance on the opposite side of the circle, and describe another curve which shall also intersect the circle, as at *m* and *n*. Then draw a straight line through the points or intersections of each ellipse *c e*, and *m n*. Measure the distance between the two straight lines at their intersections with the original curve line: also measure the distance between the said lines at a point one foot distant from the curve line, inward; subtract the lesser distance from the greater, which divide by the difference, and the quotient will show the radius in feet and decimals.

The Poet's Cabin.

A man who can make his tools and plan a set of rules whereby to make a plough or sled or rake or in the woods his timber cut wherewith to build a cottage, house or hut and shape each part and piece with care and calculation to match each other together both post and sill, or beam and brace each mate its mate and fill its place this man is entitled to the appellation of worthy citizen—man of reputation. Why should we suffer those who noth'g know that's useful but contrive to make a show of spouting eloquence, to rule & domineer o'er those in whom full power of mind appear? this is not right: this fault we must correct and worthier men than those we must select to make our laws: and if there's one more worthy than the rest an honest, wise and capable Mechanic is the best.

ADVICE TO LADIES.—The Ladies will, we presume, give us the credit of having generally so far attended to our own business, as to say but little to molest them in the enjoyment of their favorite fashions, manners or fancies; but lest we should be suspected of too much indifference toward them, we shall venture a few hints, by way of cautionary advice, which, if fully regarded and followed, will tend to prevent many unfavorable remarks from their friends of both sexes.

First then, when at parties, or in company with friends, do not be forward in conversation, for it shows conceit, or a desire to attract attention. Do not be reserved or backward in conversation, for it indicates a want of vivacity, or a disregard to the company. Do not laugh or smile much; it denotes weakness of mind. Do not look grave or seditious; for it indicates dissatisfaction with the company or conversation.

When addressed by a gentleman, do not look in his face; for it denotes boldness. Do not look down, for it has the appearance of bashfulness. Do not look away in another direction, for it will appear as if you wished to evade conversation with him.

When at church, do not look cheerful, for it indicates a want of reverence. Do not look serious, for it will appear like affectation of piety. Do not appear attentive and look up to the preacher, for you will be suspected of a desire to show your face.

When promenading in Broadway or any popular street, do not look about to the right and left, as if you had never seen a city before. Do not look at the people whom you meet, it will indicate a desire to be seen; or you may be suspected of desiring to meet an acquaintance. Do not look down, for it denotes gloom or melancholy if not guilt. Do not look straight forward, for it indicates a desire to escape or evade observation.

Alphabet of Short Rules.—Improved.

Attend well to your own business.
Be punctual in all your engagements.
Consider well before making engagements.
Do right in all things, without fear.
Envy no man his apparent prosperity.
Fret not at disappointments.
Give liberally to the suffering poor.
Hold fast your integrity.
Infringe on no man's rights.
Judge not others severely.
Keep away from evil company.
Lend to those who cannot buy.
Make no display of your charities.
Never profess what you do not practise.
Occupy your time in usefulness.
Pay every one their just dues.
Quarrel not with your associates.
Remember your dependence on Providence.
Strive to promote the happiness of others.
Treat every one with civility.
Use the things of this world with discretion.
Vilify no person's reputation.
Watch against every temptation.
Xamine your own character.
Yield not to the persuasion of the vicious.
Zealously pursue the path of duty,
& hope for everlasting joy.

MAKING GREAT MEN.—B. F. Hallit says, and no man better knows, that all the great men in the country, are made such by the newspapers; puffing them, and reporting their speeches much better than they can make them themselves.

Foreign Intelligence.

The Steamer Hibernia arrived at Boston on Friday morning, bringing European intelligence up to the 3d inst.

We are gratified to learn by this arrival that our neighbor John Bull, was not quite so much excited by President Polk's Message, as he expected to be. The prospect appears quite pacific, and the war party here have but little encouragement to bluster.

The Cambria made her passage out in eleven days. The English speculators appear to be moving in earnest in the project of a continuous railroad from Halifax to Oregon, and confidently anticipate extraordinary encouragement from Government.

An extraordinary casualty occurred at Liverpool on the 1st inst. by which several lives were lost, and much valuable property destroyed. It was no other than an artificial deluge, occasioned by the bursting of a metallic water tank, belonging to the Harrington water works, and containing 200,000 gallons of water. Several houses were demolished, two women and a child were drowned, and several other persons seriously injured.

Mr. George Smith, of Manchester, has invented an improvement in the Magnetic Telegraph, which is as usual with even frivolous inventions, is lauded by the English press. No description of the invention is given whereby we can judge of its merits.

The Dutch East India papers state that several shocks of earthquake had been felt at Ambroya, by which the Government House and several other buildings were seriously injured. The motion of the earth was vertical, and accompanied by a heavy rumbling sound.

REVOLUTION IN MEXICO.—General Paredes, having become dissatisfied with the measures and movements of the Mexican Government, and perhaps entertaining some ambitious propensities, has marched upon the capital at the head of 8000 troops. The Government forces in the City of Mexico having, on the 30th ult., pronounced against the administration, President Herera capitulated, and transferred the supreme power to the Usurper, who entered and took possession without opposition. Mexico has thus again come under a Monarchy, having plainly, shews that there is not virtue enough in the people to govern themselves. What effect this may have on the affairs between that country and the United States remains to be seen, though there appears to be no alarm nor anxiety on this account amongst our politicians at present. Paredes is said, however, to have evinced less hostility towards the American Minister, than his predecessor.

For the Scientific American.

"FRIEND PORTER.—I find, in looking over the 'New York Mechanic' of Dec. 11, 1841, an article entitled 'Atmospheric Resistance,' wherein it is stated that it would not be difficult to calculate the velocity which would be required in the wings of a wild pigeon to support the weight of a man.—and I should like to know what velocity it would take, and the amount of power it would require to support a man weighing 150 lbs.; and further: I should like to know what amount of face surface could be worked to the greatest advantage, and with the least amount of power, to sustain in the open air the above weight, together with the least amount of power that would be required.

"By answering the above in your 'Scientific American' you will oblige your constant subscriber and friend

YANKEE."

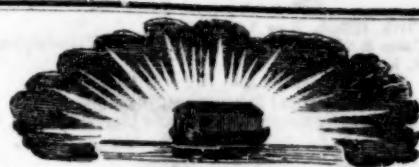
ANSWER.—Our correspondent has not, in his first question, premised the size of the wings, wherefore we will suppose them to be equal to one square foot each. Two wings of this size would require a velocity of 260 feet per second, to support a weight of 150 lbs., provided they were so constructed as to meet with no resistance in their upward motion, and that the velocity, in each vibration up and down, was equal. Each wing, in its downward motion, must of course, encounter a resistance equal to the whole weight sustained. The quantity of power required to work the wings, would be about 65 horse powers. With regard to the size of the wings or face-surface, as a matter of economy in power, the larger the better. If the face surface is 30,000 square feet to each wing, only about half of one horse power would be required to sustain this weight; and if the wings were ten times as large, the strength of a man would be amply sufficient to work them and elevate himself, together with the wings or apparatus, if it were not made too heavy. Flying materials being cheap just now, perhaps our friend will make the experiment.

GRAHAM'S MAGAZINE, for February is before us, and is in no wise inferior to its predecessors. It is embellished with the usual variety of superb engravings, the first of which represents Catharine Seaton, a most exquisite line engraving. The second is the Young Astronomer, a splendid picture by Ellis. The 'Paris Fashions,' is executed in a style unprecedented. The publishing office is in the Tribune Buildings.

THE MECHANIC'S COMPANION.—We have procured a few more copies of this invaluable work, which we shall sell at the publisher's prices. The book is worth four times the cost to any mechanic in any branch whatever. We can send them safely by mail to any part of the Union, and the postage on them will hardly be an item of consideration, in comparison with the utility of the work.

THE MAINE CULTIVATOR says, "We have a vast many agricultural papers in the country, some of which are decidedly excellent, but none, we believe, better than our own." The 'Cultivator' is right. It is in truth at least equal to any agricultural paper in the United States, and should be extensively patronized beyond the limits of Maine.

CITY IMPROVEMENT.—The Committee of the Board of Aldermen, have reported in favor of opening, widening, and straightening William street, and extending the same to Chatham street. This measure will greatly improve the general appearance of the lower part of the city.



Bethany.

Bethany was a favorite resort of mine; the affecting history of Lazarus was especially impressed on my heart, now that I was in the vicinity where the transaction took place. It is at present a wretched Arab village, situated about a mile and a quarter from Jerusalem. The course I generally pursued in my visits to it from the Latin convent, where I resided, was by the Via Dolorosa, and through the gate of St. Stephen on the East side of the city, over the brook Kedron, ascending the Mount of Olives by the same road which David went upon when cured by Shimei; this leads by the garden of Gethsemane, and the tomb of the blessed virgin crossed the place of our Saviour's ascension, and, on the descent on the other side of the Mount of Olives, entered the village of Bethany amidst the barking of ugly hyena-like dogs, which are an abundant nuisance in Syria and Turkey, whilst at the same time assailed by children screaming "Hajee Baugh-sheee." In a lane as you enter the village by the Jerusalem side, a lonely and neglected spot, the tomb of Lazarus is shown. A doorway of masonry covering the face of the rocky cavern. The original orifice may still be discerned against which the stone was laid. The cave is very deep, and at present is descended by a numerous flight of steps. St. John well expresses it when he says, "Jesus cried with a loud voice, Lazarus, come forth." Farther on, in this most melancholy looking village, is a wretched little mosque, which I would suppose to be the site of the house occupied by Mary and Martha: though there are two large gable-ends of a once respectable-looking edifice, which are pointed out as having been their residence. This village of Bethany, the favorite resting place of our blessed Saviour, I constantly resorted to every week whilst in Jerusalem. The never-to-be-forgotten circumstance of the resurrection of Lazarus, and the manner in which St. John describes it, together with its being the district from whence our Lord ascended, so interested my affections, that, in my walks about the city, my footsteps always tended hither. From the Bethany side of the Mount of Olives there is a fine view of the Dead Sea, over which hang the dark blue mountains of Moab. One would suppose he could just drop down Bethany, and in an evening's walk reach the Dead Sea; yet it is twenty-two miles distant; the intervening desert is arid and desolate in the extreme, and moreover, still considered dangerous from predatory Arabs. In the time of Lot, part of the vale, now a desert, was called Sedom or Chalk, and it is still manifest where the chalky district commences on that side of the Mount of Olives, which verges toward the desert of the Dead Sea. Sometimes I returned from Bethany to Jerusalem by the low road, round the Mount of Olives, through the village of Siloam, crossing the valley of Jehoshaphat, and so entering the city near the spot where our Lord instituted the last Supper, which is on Mount Zion.—Burton's Voyage.

THE BLESSINGS OF CHRISTIANITY.—A beautiful writer says, that Christianity enters the hut of the poor man, and sits down with him and his children; it makes them contented in the midst of privations, and leaves behind an everlasting blessing. It walks through the cities amidst all their pomp and splendor, their imaginable pride, and their unutterable misery, a purifying, ennobling, redeeming angel. It is like the beautiful champion of childhood, and the comforting associate of old age. It ennobles the noble, gives wisdom to the wise, and new grace to the lovely. The patriot, the minister, poet, and eloquent man, derive sublime power from its influence.

COMPASSION.—Compassion is an emotion of which we ought never to be ashamed. Graceful, particularly in youth, is the tear of sympathy, and the hearts that melt at the tale of woe. We should not permit ease and indulgence to contract our affections, and warp us up in a selfish enjoyment; but we should accustom ourselves to think of the distresses of human life; of the solitary cottage; the dying parent; and the weeping orphan.

PRAYING MACHINES.—On the high roads in Japan, every mountain and cliff is consecrated to some divinity, to whom travellers are required to address long prayers; but as this would require much time, many have adopted the custom of writing some forms of prayer, and elevating the same on a simple sort of wind-wheel, on the top of a staff, so that the wind may keep it in motion, which is deemed equivalent to a repetition of the prayer.

BURNING BIBLES.—Do the people know and believe and realize, that in this enlightened State of New York, and in the present enlightened age, there is a popular and powerful association who make it a practice, even on public occasions, to collect and burn all they can obtain, of the Bibles which the Bible Societies have been circulating and distributing amongst the poor people of the country? Yet such is the fact: and several hundreds of such bibles were thus destroyed by public bonfire recently, in the town of Champlain, in this State.

PRECEPT VS. PRACTICE.—Dr. Clark, in his note on Matt. xii, 2, that "An intolerant and censorious spirit is one of the greatest curses a man can well fall under;" and this remark is approved and quoted by the very men who would be most zealous in destroying or punishing all imaginary heretics.

COLORS PEOPLE OF CINCINNATI.—The Presbyterian of the West states that there are about 2000 colored persons in Cincinnati, who own real estate, besides other property, which is valued at \$150,000. They have recently established a paper entitled "The Colored Citizen," which is said to be edited with considerable ability.

ALEX. MACDONALD: PRINTER.